

*Papers read before the Society from February 1877 to
February 1878.*

1877.

- Mar. 9. The Katadioptric Aplanate. Prof. Zenger.
Observations of the phenomena of *Jupiter's* Satellites
at Adelaide, South Australia. Mr. C. Todd.
On the Visibility of the Unilluminated portion of the
disk of *Venus*. Señor A. T. Arcimis.
Observations of Occultations of Stars by the Moon,
and phenomena of *Jupiter's* Satellites made at
Cadiz in the year 1876. Señor A. T. Arcimis.
Note on the Double Star H. I. 62. Mr. S. W.
Burnham.
Note on the relative Space-penetrating Power of
Reflectors and Refractors. Dr. T. R. Robinson.
Sur le problème de Kepler. Dr. A. de Gasparis.
On apparent Brightness as an indication of Distance
in Stellar Masses. E. J. Stone.
Ephemeris for Physical Observations of *Jupiter*, 1877.
Mr. A. Marth.
On the Magnitude of η *Argûs*. Mr. J. Tebbutt.
Corrections to the *Nautical Almanac* places of the
Moon, for Longitude Observations in connection
with the Transit of *Venus*, 1874. Capt. G. L.
Tupman.
On Observations of Contacts of the Limb of *Venus* or
Mercury with that of the Sun. Prof. S. Newcomb.
On the effect of a Star's rotation on its Spectrum.
Capt. Abney.
Note on the Numerical Lunar Theory. The Astro-
nomer-Royal.
On the Nomenclature of Meteor Radiant Points.
Mr. T. W. Backhouse.
Total Eclipse of the Moon, February 27, 1877.
Rev. S. J. Perry.
Solar Physics. Mr. J. Ennis.
Note on a Transformation of Lagrange's Equations
of Motion in General Co-ordinates, which is con-
venient in Physical Astronomy. Prof. R. S. Ball.
On Photographing Solar Transits by the use of the
"Starlit Transit Eye-piece," formerly described,
and other methods. Dr. Royston Pigott.
Observations of Occultation of *Regulus*, and of the
Total Eclipse of the Moon, February 27, 1877
(with drawing). Mr. F. C. Penrose.
On the Variable Star U *Geminorum*. Mr. G. Knott.
On the Lunar Perturbations arising from the Planet
Jupiter. Mr. E. Neison.
On two Occultations of Planets by the Moon observed
by the Chinese. Mr. J. R. Hind.

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- April 13. Some Experiments bearing on the Transit of *Venus*.
Rev. S. J. Perry.
- The Planet *Vulcan*. Rev. S. J. Perry.
- Sur l'application de la Photographie à l'observation
du passage de *Venus*. Mons. A. Angot.
- Etudes sur les images photographiques obtenues au
foyer des Lunettes Astronomiques. Mons. A.
Angot.
- Report of examination of the Sun's disk at Guildown,
Guildford, on March 21, 22, and 23, 1877, for the
suspected Planet *Vulcan*. Mr. J. Rand Capron.
- Radiant points of Shooting Stars from Capt. Tup-
man's unreduced Observations, 1869 to 1871.
Mr. W. F. Denning.
- Visible Transits of *Mercury* to the year 2,000. Rev.
S. J. Johnson.
- Nebuleuses nouvelles découvertes et observées à
l'Observatoire de Marseille. Mons. E. Stephan.
- On Personal Equation. Capt. W. M. Campbell.
- The great Meteor of 1877, March 17. Capt. G. L.
Tupman.
- Remarks on the Comets of 1877, with Elements and
Ephemeris. Prof. C. Pritchard.
- Mechanical Solution of Kepler's problem. Prof. C.
Pritchard.
- Observations of Occultations of Stars by the Moon,
1875, 6, 7 (with the deduced equations between
the error of the Lunar Elements), and phenomena
of *Jupiter's* Satellites, made at the Radcliffe Ob-
servatory, Oxford. Rev. R. Main.
- On an Elliptic Function solution of Kepler's problem.
Mr. J. W. L. Glaisher.
- On the Inequality in the Moon's Longitude, dis-
covered by Prof. Newcomb. Mr. E. Neison.
- Ephemeris for Physical Observations of *Mars*, 1877.
Mr. A. Marth.
- Extract from a letter describing an Ancient Arabic
Celestial Globe. Prof. Meucci.
- The Sidereal System. Mr. Maxwell Hall.
- Description of an improved Diagram for the Gra-
phical Solution of Spherical Triangles. Mr. F. C.
Penrose.
- Heliometer Observations of the Planet *Juno*. Lord
Lindsay and Mr. Gill.
- On the proposed Expedition to observe the ap-
proaching Opposition of *Mars*. Mr. D. Gill.
- On the Opposition of the Minor Planet *Ariadne* as a
means of determining the Solar Parallax. Mr. D.
Gill.
- Nebuleuses nouvelles découvertes et observées à
l'Observatoire de Marseille. Mons. E. Stephan.

Comet II. 1877 (extract of letter to Mr. Hind).
Prof. Winnecke.

- May 11. A new Solar eye-piece. Prof. C. V. Zenger.
Lunar Eclipse observed at Cadiz on the 27th February 1877. Señor A. T. Arcimis.
A Table for Facilitating the Determination of Mean Equinoctial Time to the end of the present century. Admiral Sir C. F. A. Shadwell.
On a method of making a Pendulum swing in an approximately Cycloidal Arc. Gen. M. C. Meigs.
Second Catalogue of Micrometrical Measures of Double Stars made at the Temple Observatory, Rugby. Mr. J. M. Wilson and Mr. G. M. Seabroke.
Note on the alleged Fall of an Aerolite at Supino, Italy. Padre Secchi.
Extracts from letters received relating to the Search for the supposed Intra-Mercurial Planet. The Astronomer-Royal.
A Determination of the Semi-diameter of *Venus* at the mean distance of the Sun from the Earth. Mr. A. W. Downing.
On a method of Destroying the Vibrations in a Mercurial Reflector. Mons. De Boë.
The approaching Opposition of *Mars*. Mr. R. A. Proctor.
On a General Method of treating the Lunar Theory. Mr. E. Neison.
Elements of the Orbit of Comet 3 (Swift's), 1876. Prof. C. Pritchard.
On the Opposition of the Minor Planet *Melpomene* as a means of Determining the Solar Parallax. Mr. D. Gill.
On the Spectra of Comets *b* and *c*, 1877. Lord Lindsay.
Note on the Distribution of the Fixed Stars. Mr. R. A. Proctor.
- June 8. On Collimating the Axis of Reversible Instruments, such as Equatoreals, Transits, and Altazimuths, by testing for Parallax developed on distant scales. Dr. Royston Pigott.
Occultations observed at Windsor, New South Wales, in the year 1876. Mr. J. Tebbutt.
Note on the Arc of Light seen round *Venus* in transit. Mr. R. A. Proctor.
Note on some of M. Stephan's new Nebulæ. Mr. J. Dreyer.
Description of an Observatory at Higher Bebington, Cheshire. Mr. R. C. Johnson.
Note on the new Inequalities in the Moon's Longitude, pointed out by Mr. Neison. Prof. S. Newcomb.

On the Collective Light and Distribution of the Fixed Stars. Mr. J. I. Plummer.

On two "Flats" on the Moon's Limb, observed March 23, 1877. Dr. R. Copeland.

Corrections to Struve's Double Stars contained in *Dun Echt Observatory Publications*, Vol. I. Lord Lindsay.

- Nov. 9. Observations of *α Centauri*. Mr. R. L. J. Ellery.
 Supplementary Note on the Theory of the Horizontal Photoheliograph. Prof. W. Harkness.
 Observations on Lunar Eclipse, August 23, 1877. Rev. S. J. Johnson.
 Mémoire sur la période commune à la fréquence des Taches Solaires et à la variation de la déclinaison magnétique. Dr. R. Wolf.
 Measures of *α Centauri*. Mr. H. C. Russell.
 Note upon the proper Motion of *Groombridge 3511*. Prof. T. H. Safford.
 Remarks to accompany Drawing of *Mars*. Mr. G. D. Hirst.
 Total Lunar Eclipse, August 23, 1877. Mr. H. Pratt.
 Note on the Eclipse of the Moon, August 23, 1877. Mr. J. E. H. Peyton.
 Phenomena of *Jupiter's* Satellites 1875-77. Rev. S. J. Perry.
 Lunar Eclipse. August 23, 1877. Rev. S. J. Perry.
 Eclipses of *Jupiter's* Satellites in 1875, observed at Willet's Point, U.S.A. Mr. W. H. Bixby.
 On the Synodisms of *Saturn's* Satellites. Mr. S. M. Drach.
 On three small Inequalities in the mean motion of the *Earth*, and an Inequality in the mean motion of *Mars*. Mr. E. Neison.
 Note on the Second Catalogue of Micrometrical Measures of Double Stars made at the Temple Observatory, Rugby. Mr. J. M. Wilson and Mr. G. M. Seabroke.
 On the relative Brightness of the details of *Jupiter's* Disk and Satellites. Prof. C. V. Zenger.
 On the proper Motions of *Groombridge 2275* and *2276* (Σ 1972). Mr. E. Dunkin.
 Note on the supposed Physical Association of *Groombridge 3477* and *3511*. Mr. E. Dunkin.
 A working List of Binary and other interesting Double Stars. Mr. E. Crossley and Mr. J. Gledhill.
 On a New Term of Long Period in the mean Motion of the Moon. Mr. E. Neison.

On an Arrangement of the Spectroscope for the observation of Objects of considerable Angular Diameter. Lord Lindsay.

Observations of the Lunar Eclipse, August 23, 1877, made at Morges, Switzerland. Mons. V. Fasel.

Expedition to Ascension. Preliminary Report. Mr. D. Gill.

Expedition to Ascension. General Report and duplicate copies of Observations, etc. Mr. D. Gill.

On the Physical Condition of *Mars*. Mr. J. Brett.

Note on the Spectrum of the Eclipsed Moon. Captain W. Noble.

Observations of the Satellite of *Neptune*. Mr. J. Ward.

On the Atmospheric Lines between D_1 and D_2 in the Spectrum. Mr. H. C. Russell.

Physical Observations of *Mars* made at the Royal Observatory Greenwich. The Astronomer-Royal.

On the Spectrum of a Solar Spot observed at the Royal Observatory, Greenwich. The Astronomer-Royal.

Elements and Ephemeris of Coggia's Comet. Prof. C. Pritchard.

On the Law of Force tending to any point whatever in the plane of motion in order that the Orbit may always be a Conic. Mr. J. W. L. Glaisher.

On the Motion of the Moon's Node in the case when the Orbits of the Sun and Moon are supposed to have no Eccentricities, and their Mutual Inclination is supposed to be indefinitely small. Prof. J. C. Adams.

Observations of *Mars* at Madeira, August and September 1877. Mr. N. E. Green.

A new Astronomical Clock. Mr. C. V. Boys.

On the inferences for the value of mean Solar Parallax and other elements deducible from the Telescopic Observations of the Transit of *Venus* 1874, December 8, which were made in the British Expedition for the observation of that Transit. The Astronomer-Royal.

Dec. 14. Ninth Catalogue of new Double Stars discovered with the 6-inch Refractor. Mr. S. W. Burnham.

Note on a special Case of "the most probable Result" of a number of Observations. Mr. J. M. Wilson.

On *Jupiter's* Third Satellite. Mr. J. Tebbutt.

Notes on *Mars*, 1877. Mr. H. Pratt.

Expedition to Ascension. Report, November 11, 1877. Mr. D. Gill.

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Jan. 11.

- Extract of a letter to Mr. Lynn relating to a remarkable Solar Spot. Rev. F. Howlett.
- Note upon the Determination of the Longitude of Kurrachee and Madras. Major.-Gen. T. Addison.
- Opposition of *Mars*, 1877. Mr. Maxwell Hall.
- On a cause for the appearance of Bright Lines in the Spectra of irresolvable Star Clusters. Mr. E. J. Stone.
- Total Lunar Eclipse, August 23, 1877, observed at Cadiz. Señor A. T. Arcimis.
- Suspected repetition or second outbursts from Radiant points, and on the long duration of Meteor showers. Mr. W. F. Denning, and remarks by Capt. Tapman.
- On the probable errors of Transits of the first and second limbs of the Sun, observed by the Chronographic Method. Mr. A. W. Downing.
- Note on the Transit of the Shadow of *Titan*. Lord Lindsay.
- Sur les mouvements réels des Étoiles dans l'Espace. Señor V. Ventosa.
- Ephemeris for determining the positions of the Satellites of *Uranus*. Mr. A. Marth.
- On the correction of the Elements of *Ceres*. Mr. W. Godward.
- Note on the Satellites of *Mars* and *Saturn*. Mr. A. A. Common.
- The Sun-spot Period. Mr. B. G. Jenkins.
- On a secular term in the mean Motion of the Moon. Mr. E. Neison.
- On a small term of long period in the mean Motion of the Moon. Mr. E. Neison.
- On a Cyclonic arrangement of the Solar Granules. Mr. W. Huggins.
- On a combined Position and Setting Circle, rendering the Declination Circle unnecessary in large Newtonian Equatoreals. Mr. Wentworth Erck.
- Expedition to Ascension. Report, December 3, 1877. Mr. D. Gill.
- The center of Gravity of the apparent disk of a planet. Prof. A. Hall.
- Note on Specular reflection from *Venus*. Mr. W. H. M. Christie.
- On the evidence of periodic variability of the Nebula H. II. 278. Prof. A. Winnecke.
- On the variable star U *Geminorum*. Mr. G. Knott.
- On the distribution of Fixed Stars in Space. Mr. S. Waters.
- Note on a Spectroscope made by Mr. Grubb for Prof. Young. Mr. Wentworth Erck.